

Abstract of the Disclosure

SC light is generated from the input signal 2, of an OTDM signal light 1 with wavelength λ_{s1} and an input
 5 signal 2 with wavelength λ_{s2} using an optical fiber and the like, and the wavelength of the SC light is converted into wavelength λ_{s1} using a BPF with center wavelength λ_{s1} (a specific-timing optical pulse with wavelength λ_{s1} is extracted from the SC light). After the addition
 10 timing of the wavelength-converted light is adjusted by a delayer (τ), both this wavelength-converted light and signal light 1 are inputted to an optical add circuit and are added.